



## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PH-1783-PCT	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/JP2003/009877	International filing date ( <i>day/month/year</i> ) 04 August 2003 (04.08.2003)	Priority date ( <i>day/month/year</i> )
International Patent Classification (IPC) or national classification and IPC G06F 9/48, F02D 45/00		
Applicant HITACHI, LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 04 August 2003 (04.08.2003)	Date of completion of this report 02 February 2004 (02.02.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/009877

**I. Basis of the report****1. With regard to the elements of the international application:\***

- the international application as originally filed  
 the description:

pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

- the claims:

pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19)  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

- the drawings:

pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

- the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:**

- the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).  
 the language of publication of the international application (under Rule 48.3(b)).  
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**

- contained in the international application in written form.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority in written form.  
 furnished subsequently to this Authority in computer readable form.  
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**4.  The amendments have resulted in the cancellation of:**

- the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets/fig \_\_\_\_\_

**5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims		NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

**2. Citations and explanations**

Document 1: JP, 2003-15885, A (Canon Inc.), January 17, 2003 (01.17.03), Paragraph 0007

Document 2: Takanori YOKOYAMA et al., "Kumikomi Seigyo System no tame no Jikan Kudo Object Shiko Software Kaihatsuho," The Transactions of the Institute of Electrons, 2001, Vol. J84-D-1, No. 4, pp. 338-349

Document 3: JP, 2003-36176, A (Sony Corporation), February 7, 2003 (02.07.03), Paragraph 0008

Document 4: JP, 62-209626, A (Casio Computer Co., Ltd.), September 14, 1987 (09.14.87), Page 1, lower right column, lines 1-8

**Claims 1, 2, 5, 6, 7, 8, 9 and 10**

The inventions described in claims 1, 2, 5, 6, 7, 8, 9 and 10 do not appear to involve an inventive step based on document 1 cited in the ISR.

As described in, for example, document 1, an interruption such that, when certain interrupt processing ends, polling processing of an interrupt parameter is performed; if there are other interrupt requests, such a processing is performed; and when there is no interrupt request, a series of interrupt processes is ended, is well known to a party skilled in the art.

**Claim 3**

The invention described in claim 3 does not appear to involve an inventive step based on documents 1 and 2 cited in the ISR.

Cyclically starting event processing is well known to a party skilled in the art as described in, for example, document 2; therefore, configuring so as to include event processing for a cyclical start in processing performed in the invention described in document 1 could be easily conceived of by a party skilled in the art.

**Claim 4**

The invention described in claim 4 does not appear to involve an inventive step based on documents 1 and 3 cited in the ISR.

Performing timer polling is well-known art as described in, for example, document 3; therefore, configuring so as to perform timer polling in the invention described in document 1 could be easily conceived of by a party skilled in the art.

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Due to the following reasons, claims of the present application are not sufficiently supported by the specification, and the meanings described in claims are not technically clear.

The specification and drawings of the present application (see drawings, Fig. 5, step 505 and Fig. 11, step 1105) describe an embodiment, wherein task processing corresponding to a generated interrupt signal is performed by a task processing section, poling is performed by a poling section when the task processing ends to output a task processing signal, and task processing is performed by the task processing section based on the task processing signal. However, “a real time control system comprising a driver section receiving an input signal and outputting an interrupt signal corresponding to each task processing, a poling section performing poling based on the interrupt signal, and a task processing section performing task processing based on the interrupt signal” described in claim 1 is not described.

Therefore, claim 1 of the present application is not sufficiently supported by the specification.

Also, claim 1 of the present invention describes a poling section wherein poling is performed based on an interrupt signal, and when a task ends a task processing signal is outputted based on the poling.

However, according to the description in claim 1 of the present application, a relationship between “poling” performed based on an interrupt signal and “the poling” outputting a task processing signal based on the time when task ends is not clear; therefore, a relationship of these descriptions regarding a poling section is not technically clear.

Therefore, according to the description in claim 1 of the present application, the meaning of processing by a poling section is not clear.

Claim 1 of the present application describes a task processing section such that task processing is performed based on an interrupt signal, and task processing is performed based on a task processing signal. In the invention described in claim 1 of the present application, a task processing signal is outputted when a task ends.

According to the description of claim 1 of the present application, a relationship between “task processing” performed based on an interrupt signal, “the task” outputting a task processing signal when the processing ends, and “the task processing” performed based on the task processing signal is not clear.

If these task processing items are the same, a task processing section should perform a task processing ended based on the task processing signal outputted when the task processing ends, however, this meaning is not clear.

Therefore, according to the description in claim 1 of the present application, the meaning of processing by a task processing section is not technically clear.

As above, according to the description of claim 1 of the present application, the meanings of processing by a poling section and processing by a task processing section are not technically clear.

Therefore, the meaning of the description in claim 1 of the present application is not technically clear.

Similarly, claims 2 through 12 that directly or indirectly cite claim 1 are not sufficiently supported by the specification either, and the meaning thereof is not technically clear.

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**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of Box V.2:

**Claims 11 and 12**

The inventions described in claims 11 and 12 do not appear to involve an inventive step based on documents 1 and 4 cited in the ISR.

Preferentially performing interrupt processing different from executed interrupt processing is commonly used art as described in, for example document 4; therefore, no particular difficulty can be found in configuring commonly used art described in document 4 in the invention described in document 1.